REMARKS/ARGUMENTS

This is in response to the Office Action of August 8, 2006. The period for response has been extended by two (2) months to January 8, 2007 by the enclosed Petition for Extension of Time. In that Office Action the Examiner noted that corrected drawings were required. In addition, the Examiner rejected claims 1-8 under 35 U.S.C. 103(a) as being unpatentable over Schneiter (USPN 4,960,970) in view of Mosavi et al. (USPN 6,252,195).

Applicants have amended claims 1 and 6 to provide that the laser beam emitted by the laser is stationary with respect to the vibrating lens.

Corrected drawings are submitted herewith.

The rejection of claims 1-8 under 35 U.S.C. 103(a) as being unpatentable over Schneiter (USPN 4,960,970) in view of Mosavi et al. (USPN 6,252,195) is respectfully traversed.

Applicants respectfully submit that neither Schneiter nor Mosavai et al., either alone or in combination, disclose or suggest Applicants' claimed invention. Neither reference recognizes the problem solved by the Applicants with their novel invention. The combination of Schneiter and Mosavi et al. would not produce Applicants' novel method of drilling surgical needles or Applicants' novel apparatus.

More specifically, mounting a Nd-YAG laser to a vibrating machine frame would result in short term misalignment of the beam and in long term damage to the laser. Removing the laser from a vibrating frame and mounting it to a separate non-vibrating frame will eliminate these issues but create another problem. That problem is that it will be virtually impossible to hit a target site on a workpiece such as a surgical needle, wherein the workpiece is vibrating since it it is mounted to the vibrating machine frame. Applicants have solved this problem, surprisingly and unexpectedly, by mounting a spherical lense to the vibrating frame. A laser beam emitted by the Nd-YAG laser (the laser being mounted to the non-vibrating separate frame) is directed through the vibrating spherical lens mounted to the vibrating frame. Because of the nature of the physics of a spherical lens, the lens compensates for the vibration of the frame and the vibration of the lens and directs the laser beam precisely to a target site on the vibrating workpiece, which is mounted to the vibrating frame. In other words, the laser and emitted laser beam are not vibrating, and are stationary with respect to the vibrating lens, the vibrating machine frame and the vibrating workpiece.

By passing the non-vibrating (or stationary) laser beam through a vibrating spherical lens mounted to the vibrating frame, the lens will operate upon the laser beam to direct it precisely to the vibrating target site on the vibrating workpiece.

Mosavi et al. does disclose a needle drilling process but does not contemplate Applicants' claimed invention for drilling a vibrating workpiece. Schneiter does not disclose a method of drilling a vibrating workpiece, wherein the vibration is caused by the mounting of the workpiece to a vibrating machine frame. Schneiter induces vibration in the stationary workpiece and measures the vibration to determine when there is breakthrough. The vibrations are acoustically monitored. The workpiece in Schneiter is not vibrating as a result of being mounted to a vibrating machine frame. If the workpiece in Schneiter were vibrating in a manner caused by a vibrating machine frame, it would not be possible to precisely drill a hole through a workpiece. In other words, the workpiece in Schneiter is not vibrating with respect to a stationary laser beam. In addition, Scheiter does not disclose a vibrating spherical lens through which a stationary laser beam is directed.

Applicants have amended their claims to indicate that the laser beam in their method is stationary with respect to the vibrating lens and the workpiece.

Accordingly, on the basis of the foregoing discussion, the Examiner is respectfully requested to make the amendments to the claims of record and to withdraw her rejection and allow the claims.

Respectfully submitted,
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